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Morphological, Physiological and Pathological Investigation on *Fusarium oxysporum* f.sp. *sesami*

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IN VITRO. morphological and physiological characters of *Fusarium oxysporum* f.sp. *sesami* i.e. linear growth, sporulation and pigmentation were studied on different media, different degrees of temperature , relative humidity (R.H.) and acidity values(pH). Also,pathological potential of fungal was studied on sesame plants in relation with fungal morphological and physiological characters. Potato dextrose agar (PDA) was the best medium for *F. oxysporum* f. sp. *sesami* linear growth, chlamydospores formation and pigment production, while yeast extract sucrose agar (YES) medium was the best medium for amount of growth, conidiospores and chlamydospores formation. Growth of *F. oxyspoum* f. sp. *sesami* increased as temperature degrees increased to give maximum linear growth at 30 ºC. Twenty five centigrade was the best temperature for mycelium weight, conidiospores and chlamydospores formation. Increasing relative humidity were increased fungal linear growth, chlamydospores formation and pigmentation till 100% (R.H). Meanwhile, 74% (R.H.) was the best for conidiospores production on Czapek's agar medium. Maximum fungal linear growth was found at acidity (pH 5.5), while, maximum of mycelium weight and sporulation recorded at (pH 5.2). Meanwhile chlamydospores formation highly production at (pH, 6.4).

No correlation between pathogenicity test of *F. oxysporum* f.sp. *sesami*, pigment production and amount of fungal growth was observed.

Keywords: Sesame, Wilt, *Fusarium oxysporum* f.sp. *sesame*, Temperature, Relative humidity and acidity.

Sesame plants are subject to attack by the wilt fungus *Fusarium oxysporum* f.sp. *sesami* . In USA (Armstrong & Armstrong, 1950, Castellani, 1950 and Rivers *et al.*, 1965) in India (Malaguti, 1961, Buldeo & Rane, 1978, Virk & Gemawat 1982 and Kavak & Boydak, 2006) in Iran (Banihashemi, 1982) in China (Lili, 1988) in Korea (Kang *et al.*, 1985, Shin *et al.*, 1987 and Paik *et al.*, 1988) in Egypt (Abd El-Ghany *et al.*, 1970, Seoud *et al.*, 1982 ; El-Deeb *et al.*, 1985, Zahra, 1990, Elewa *et al.*, 1994, Khalifa, 1997, Ziedan, 1998, Sahab *et al.*, 2001, Mostafa, *et al.*, 2003 and Abou Sereih *et al.*, 2007). *Fusarium oxysporum* f. *niveum* grew most rapidly on PDA media between 24°C and 24°C and 32°C, minimum temperature being above 8°C and its maximum temperature above 35°C. The fungus grew rapidly on a wide range of acid and alkaline media pH 3 to 8.4 (Porter, 1928 and Raghuwanshi & Deokar, 1993a,b). Formae specials of

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